

II. CLAIM AMENDMENTS

1. (Currently amended) A method of determining a bit rate of information transmitted from a first communication device to a second communication device, the first communication device comprising a protocol stack, the protocol stack comprising a protocol layer, the protocol layer providing a logical channel for transferring the transmitted information through said protocol layer, the method comprising:

transferring the information transmitted information from the first communication device through the protocol layer of the first communication device via said logical channel according to a chosen transport format, the chosen transport format defining a transmission block size for transfer of said transmitted information via the logical channel, an amount of transmitted information equal to the transmission block size being transferred in a predetermined transmission time interval;

determining, at a processor of the first communication device, a bit rate value representative of the bit rate in the logical channel on the basis of the chosen transport format by dividing the transmission block size of the chosen transport format by the predetermined transmission time interval; and

maintaining and updating an indication of the determined bit rate value in a memory available for use by the first communication device; and

providing an indication of the determined bit rate value to another protocol layer of the first communication device or an application program to enable said other protocol layer or application to adapt its operation.

2-5. (Cancelled)

6. (Previously Presented) A method according to claim 1, wherein said protocol stack is a WCDMA (Wideband Code Division Multiple Access) protocol stack and the first communication device communicates with said second communication device using the WCDMA protocol stack.

7. (Previously Presented) A method according to claim 6, wherein the protocol layer through which the transmitted information is transferred via said logical channel is the MAC (Medium Access Control) Layer of the WCDMA protocol stack.

8. (Previously Presented) A method according to claim 1, wherein said first communication device is a wireless terminal of a cellular communication network and the second communication device is a network element of a cellular communication network.

9. (Previously Presented) A method according to claim 1, wherein said first communication device is a network element of a cellular communication network and said second communication device is a wireless terminal of a cellular communication network.

10. (Previously Presented) A method according to claim 1, wherein said transport format comprises parameters TBS (Transmission Block Size) and TTI (Transmission Time Interval), the method comprising determining the bit rate value representative of the bit rate in said logical channel on the basis of the values of said parameters by

means of a mathematical calculation in which the value of parameter TBS is divided by the value of parameter TTI, thereby providing an estimate of the instantaneous bit-rate in the logical channel during a period of time defined by TTI.

11. (Previously Presented) A method according to claim 1, wherein said protocol layer has a plurality of logical channels including the logical channel, said method further comprising determining, at the first communication device, a plurality of bit rate values including said bit rate value, each of said plurality of bit rate values being representative of a bit rate in a corresponding one of said plurality of logical channels, each of said plurality of bit rate values being determined on the basis of a transport format chosen for the corresponding logical channel.

12 - 13. (Cancelled)

14. (Previously Presented) A method according to claim 6, comprising obtaining information about the chosen transport format from the MAC Layer of the WCDMA protocol stack in response to the transfer of a data block coming from the RLC Layer of the WCDMA protocol stack from a logical channel of the MAC Layer to a transport channel of the Physical Layer of the WCDMA protocol stack in connection with transmission of the data block.

15 - 18. (Cancelled)

19. (Previously Presented) A method according to claim 1, comprising calculating an average bit rate in said logical channel.

20. (Previously Presented) A method according to claim 19, comprising calculating said average as a running average.

21. (Previously Presented) A method according to claim 19, comprising maintaining and updating said average in a memory available for use by the first communication device.

22-24. (Cancelled)

25. (Currently amended) A method according to claim 1, ~~further comprising providing an indication of the determined bit rate value to another~~ user protocol layer to enable said user protocol to adapt its operation.

26. (Previously Presented) A method according to claim 11, further comprising determining a total bit rate of a PDP (Packet Data Protocol) context employing more than one of said logical channels by adding the bit rate values of respective ones of the logical channels in use by the PDP context.

27. (Currently amended) A method of determining a bit rate of information received at a first communication device from a second communication device, the first communication device comprising a protocol stack, the protocol stack comprising a protocol layer, the protocol layer providing a logical channel for transferring the received information through said protocol layer, the method comprising:

transferring the information received ~~information from the second communication device~~ through the protocol layer of the first communication device via said logical channel according to a chosen transport format, the chosen transport format defining a transmission block size for transfer of said received information via the logical channel, an amount of received information equal to the transmission block size being transferred in a predetermined transmission time interval;

determining, at in a processor of the first communication device, a bit rate value representative of the bit rate in the logical channel on the basis of the chosen transport format by dividing the transmission block size of the chosen transport format by the predetermined transmission time interval; and

maintaining and updating an indication of the determined bit rate value in a memory available for use by the first communication device; and

providing an indication of the determined bit rate value to another protocol layer of the first communication device or an application program to enable said other protocol layer or application to adapt its operation.

28. (Previously Presented) A method according to claim 27, wherein said first communication device comprises a WCDMA protocol stack, the method comprising obtaining information about the chosen transport format from the MAC Layer of the WCDMA protocol stack.

29. (Currently amended) A communication device comprising a protocol stack, the protocol stack comprising a protocol layer, the protocol layer being configured to provide

a logical channel for transferring transmitted information through said protocol layer, the communication device further comprising:

- a processing element operable to transfer the transmitted information through the protocol layer via said logical channel according to a chosen transport format, the chosen transport format defining a transmission block size for transfer of said transmitted information via the logical channel, an amount of transmitted information equal to the transmission block size being transferred in a predetermined transmission time interval;
- a bit rate estimation block operable to determine a bit rate value representative of the bit rate in the logical channel on the basis of the chosen transport format by dividing the transmission block size of the chosen transport format by the predetermined transmission time interval; and
- a database block operable to maintain and update an indication of the determined bit rate value in a memory available for use by the communication device,

wherein the database block is configured to provide an indication of the determined bit rate value to another protocol layer of the first communication device or an application program to enable said other protocol layer or application to adapt its operation.

31. (Previously Presented) A communication device according to claim 29, wherein the bit rate estimation block is operable to determine the bit rate value in the logical channel repeatedly.

32. (Cancelled)

33. (Previously Presented) A communication device according to claim 29, wherein the database block is operable to maintain an average of the bit rate in the logical channel.

34. (Previously Presented) A communication device according to claim 33, wherein the database block is operable to calculate said average as a running average.

35. (Cancelled)

36. (Currently amended) A communication device comprising a protocol stack, the protocol stack comprising a protocol layer, the protocol layer being configured to provide a logical channel for transferring received information through said protocol layer, the communication device comprising:

- a processing element operable to transfer the received information through the protocol layer via said logical channel according to a chosen transport format, the chosen transport format defining a transmission block size for transfer of said received information via the logical channel, an amount of received information equal to the transmission block size being transferred in a predetermined transmission time interval;

a bit rate estimation block operable to determine a bit rate value representative of the bit rate in the logical channel on the basis of the chosen transport format by dividing the transmission block size of the chosen transport format by the predetermined transmission time interval; and

a database block operable to maintain and update an indication of the determined bit rate value in a memory available for use by the communication device,

wherein the database block is configured to provide an indication of the determined bit rate value to another protocol layer of the first communication device or an application program to enable said other protocol layer or application to adapt its operation.

37. (Previously Presented) A method according to claim 27, wherein said protocol stack is a WCDMA (Wideband Code Division Multiple Access) protocol stack and that the first communication device communicates with said second communication device using the WCDMA protocol stack.

38. (Previously Presented) A method according to claim 37, wherein the protocol layer through which the received information is transferred via said logical channel is the MAC (Medium Access Control) Layer of the WCDMA protocol stack.

39. (Previously Presented) A method according to claim 27, wherein said first communication device is a wireless terminal of a cellular communication network and the second communication device is a network element of a cellular communication network.

40. (Previously Presented) A method according to claim 27, wherein said first communication device is a network element of a cellular communication network and said second communication device is a wireless terminal of a cellular communication network.

41. (Previously Presented) A method according to claim 27, wherein said transport format comprises parameters TBS (Transmission Block Size) and TTI (Transmission Time Interval), the method comprising determining the bit rate value representative of the bit rate in said logical channel on the basis of the values of said parameters by means of a mathematical calculation in which the value of parameter TBS is divided by the value of parameter TTI, thereby providing an estimate of the instantaneous bit-rate in the logical channel during a period of time defined by TTI.

42. (Previously Presented) A method according to claim 27, wherein said protocol layer has a plurality of logical channels including said logical channel, the method further comprising determining, at the first communication device, a plurality of bit rate values including said bit rate value, each of said plurality of bit rate values being representative of a bit rate in a corresponding one of said plurality of logical channels, each of said plurality of bit rate values being determined on the basis of the transport format chosen for the corresponding logical channel.

43 - 44. (Cancelled)

45. (Previously Presented) A method according to claim 27, comprising calculating an average bit rate in said logical channel.

46. (Previously Presented) A method according to claim 45, comprising calculating said average as a running average.

47. (Previously Presented) A method according to claim 45, comprising maintaining and updating said average in a memory available for use by the first communication device.

48. (Previously Presented) A method according to claim 42, comprising determining a total bit rate of a PDP (Packet Data Protocol) context employing more than one logical channel by adding the bit rate values of the logical channels in use by the PDP context.

49. (Currently Amended) A method comprising:

~~periodically~~ receiving, in a communication device, ~~periodic~~ indications of a transmission block size and a transmission time interval associated with a transport format chosen for transfer of information through a protocol layer of a protocol stack of a device via a logical channel;

determining, in the communication device, a bit rate value representative of the bit rate in the logical channel on the basis of the chosen transport format by dividing the indicated transmission block size by the indicated transmission time interval;
and

maintaining and updating an indication of the determined bit rate value in a database; and

providing an indication of the determined bit rate value to another protocol layer of the first communication device or an application program to enable said other protocol layer or application to adapt its operation.

50. (Cancelled)

51. (Cancelled)

52. (Previously Presented) A method according to claim 49, comprising determining bit rate values for more than one logical channel on the basis of respective transport formats chosen for said more than one logical channel.

53. (Previously Presented) A method according to claim 52, comprising determining a total bit rate of a PDP (Packet Data Protocol) context by adding the bit rate values determined for the logical channels in use by the PDP context.

54. (Previously Presented) A method according to claim 52, comprising determining a total bit rate for the protocol layer by adding together the bit rate values determined for all logical channels of the protocol layer.

55. (Previously Presented) A method according to claim 49, comprising providing an indication of the direction of the logical channel in the database.

56. (Cancelled)

57. (Previously Presented) A method according to claim 49, comprising not updating the bit rate value in the database if no information is transferred through the protocol layer via the logical channel in a particular transmission time interval.

58. (Previously Presented) A method according to claim 49, comprising updating the bit rate value in the database with a value of zero if no information is transferred through the protocol layer via the logical channel in a particular transmission time interval.

59. (Previously Presented) A method according to claim 49, comprising determining that a bit rate value maintained in the database is out of date if a last update of the bit rate value was performed substantially longer ago than one transmission time interval.

60. (Previously Presented) A method according to claim 49, comprising calculating an average bit rate value representative of an average bit rate in said logical channel.

61. (Previously Presented) A method according to claim 60, comprising calculating said average as a running average of repeatedly determined bit rate values.

62. (Previously Presented) A method according to claim 60, comprising maintaining and updating said average bit rate value in the database.

63. (Previously Presented) A method according to claim 49, comprising providing an indication of at least one of a determined bit rate value and an average bit rate from the database responsive to a request received from an application program or a user protocol.

64. (Previously Presented) A method according to claim 49, comprising automatically providing an indication of at least one of a determined bit rate value and average bit rate from the data base to an application program or a user protocol.

65. - 68. (Cancelled)

69. (Previously Presented) A method according to claim 49, comprising estimating a bit rate at another protocol layer of the protocol stack.

70. (Currently amended) An apparatus comprising:

- a bit rate estimation block operable to periodically receive indications of a transmission block size and a transmission time interval associated with a transport format chosen for transfer of information through a protocol layer of a protocol stack via a logical channel and to determine a bit rate value representative of the bit rate in the logical channel on the basis of the chosen transport format by dividing the indicated transmission block size by the indicated transmission time interval; and

- a database block operable to maintain and update an indication of the determined bit rate value,

wherein the database block is configured to provide an indication of the determined bit rate value to another protocol layer of the first communication device or an application program to enable said other protocol layer or application to adapt its operation.

71 - 73. (Cancelled)

74. (Previously Presented) Apparatus according to claim 70, wherein the bit rate estimation block is operable to determine a bit rate value for more than one logical channel on the basis of respective transport formats chosen for said more than one logical channel.

75. (Previously Presented) Apparatus according to claim 74, wherein the database block is coupled to receive indications of the bit rate values determined for said more than one logical channel and logical channel identifiers associated with the logical channels, and is operable to maintain and update bit rate values associated with said more than one logical channel.

76. (Previously Presented) Apparatus according to claim 75, wherein the database block is operable to determine a total bit rate of a PDP (Packet Data Protocol) context by adding the bit rate values determined for the logical channels in use by the PDP context.

77. (Previously Presented) Apparatus according to claim 75, wherein the database block is operable to determine a total bit rate for the protocol layer by adding together the bit rate values determined for all logical channels of the protocol layer.

78. (Previously Presented) Apparatus according to claim 70, wherein the database block is operable not to update the bit rate value for the logical channel if no information is transferred through the protocol layer via the logical channel in a particular transmission time interval.

79. (Previously Presented) Apparatus according to claim 70, wherein the database block is operable to update the bit rate value for the logical channel with a value of zero if no information is transferred through the protocol layer via the logical channel in a particular transmission time interval.

80. (Previously Presented) Apparatus according to claim 70, wherein the database block is operable to determine that a bit rate value maintained in the database is out of date if a last update of the bit rate value was performed substantially longer ago than one transmission time interval.

81. (Previously Presented) Apparatus according to claim 70, wherein the database block is operable to maintain an average bit rate value representative of an average bit rate in said logical channel.

82. (Previously Presented) Apparatus according to claim 81, wherein the database block is operable to calculate said average as a running average of repeatedly determined bit rate values.

83. (Previously Presented) Apparatus according to claim 70, wherein the database block is operable to provide an indication of at least one of a determined bit rate value

and an average bit rate responsive to a request received from an application program or a user protocol.

84. (Previously Presented) Apparatus according to claim 70, wherein the database block is operable to provide an indication of at least one of a determined bit rate and an average bit rate from the data base automatically to an application program or a user protocol.

85. (Currently amended) A communication device comprising:

a bit rate estimation block operable to periodically receive indications of a transmission block size and a transmission time interval associated with a transport format chosen for transfer of information through a protocol layer of a protocol stack via a logical channel and to determine a bit rate value representative of the bit rate in the logical channel on the basis of the chosen transport format by dividing the indicated transmission block size by the indicated transmission time interval; and

a database block operable to maintain and update an indication of the determined bit rate value;

wherein the database block is configured to provide an indication of the determined bit rate value to another protocol layer of the first communication device or an application program to enable said other protocol layer or application to adapt its operation.

86. (Previously Presented) A communication device according to claim 85, wherein the communication device is a mobile station of a WCDMA (Wideband Code Division Multiple Access) wireless communication network, the protocol stack is a WCDMA protocol stack and the protocol layer is a MAC (Medium Access Control) layer of the WCDMA protocol stack.

87. (Previously Presented) A communication device according to claim 85, wherein the communication device is a network element of a WCDMA (Wideband Code Division Multiple Access) wireless communication network, the protocol stack is a WCDMA protocol stack and the protocol layer is a MAC (Medium Access Control) layer of the WCDMA protocol stack.

88. (Currently amended) A communication device comprising a memory encoded with a software program for determining a bit rate of information transferred through a protocol layer of a protocol stack via a logical channel, which, when executed by the communication device, is configured to:

periodically receive indications of a transmission block size and a transmission time interval associated with a transport format chosen for transfer of said information via the logical channel;

determine a bit rate value representative of the bit rate in the logical channel on the basis of the chosen transport format by dividing the indicated transmission block size by the indicated transmission time interval; and

maintain and update an indication of the determined bit rate value in a database;
and

provide an indication of the determined bit rate value to another protocol layer of the first communication device or an application program to enable said other protocol layer or application to adapt its operation.

89. (Cancelled)

90. (Cancelled)

91. (Currently amended) A method according to claim 27, ~~further~~-comprising providing an indication of the determined bit rate value to ~~another user~~ protocol layer to enable said user protocol to adapt its operation.